

Serial No. 09/841,451

**IN THE CLAIMS:**

Claims 3, 7, 9, 22-74, 77-79, 86, 87, 89-100 and 103 were previously canceled. No claims have been amended herein. All of the pending claims 1 through 125 are presented below. This listing of claims will replace all prior versions and listings of claims in the application. Please enter these claims as amended.

1. (Previously presented) An airway adapter configured to substantially simultaneously provide data indicative of respiratory gas flow and of a concentration of at least two substances present in respiration of an individual, comprising:  
a housing with a bore formed therethrough;  
a respiratory flow detection component formed in the housing and in communication with the bore;  
a first respiratory detection component configured to facilitate sensing of at least a first of the at least two substances without diverting respiratory gases from the housing and comprising a detection chamber within the housing, a boundary of the detection chamber at least partially defined by at least one window; and  
a second respiratory detection component disposed on at least a portion of the at least one window and comprising at least one luminescence quenching sensor configured to facilitate sensing of at least a second of the at least two substances without diverting respiratory gases from the housing.

2. (Previously presented) The airway adapter of claim 1, wherein the respiratory flow detection component comprises:  
a structure within the housing for creating therein a pressure differential in respiratory gas flow;  
and  
first and second pressure bores formed in the housing and located so as to facilitate detection of the pressure differential.

Serial No. 09/841,451

3. (Canceled)
4. (Previously presented) The airway adapter of claim 1, wherein the boundary of the detection chamber is at least partially defined by opposed windows.
5. (Previously presented) The airway adapter of claim 1, wherein the at least one window is optically compatible so as to permit a beam of infrared radiation to traverse the detection chamber.
6. (Previously presented) The airway adapter of claim 1, wherein the first respiratory detection component is configured to facilitate measurement of at least one of CO<sub>2</sub>, N<sub>2</sub>O, and an anesthetic agent.
7. (Canceled)
8. (Previously presented) The airway adapter of claim 1, wherein the first respiratory detection component and the second respiratory detection component include at least one common element.
9. (Canceled)
10. (Previously presented) The airway adapter of claim 1, wherein the at least one window is formed from a polymer.
11. (Previously presented) The airway adapter of claim 10, wherein the polymer comprises a biaxially oriented polypropylene.

Serial No. 09/841,451

12. (Previously presented) The airway adapter of claim 2, wherein the structure for creating the pressure differential comprises at least one strut.

13. (Previously presented) The airway adapter of claim 12, wherein the first and second pressure bores are at least partially formed within the at least one strut.

14. (Previously presented) The airway adapter of claim 13, wherein the at least one strut comprises a restriction member with at least one surface oriented so as to substantially perpendicularly face a direction of respiratory gas flow through the housing.

15. (Previously presented) The airway adapter of claim 14, wherein the restriction member has a disk shape.

16. (Previously presented) The airway adapter of claim 14, wherein the at least one strut includes a taper oriented toward the detection chamber.

17. (Previously presented) The airway adapter of claim 13, wherein the at least one strut is diametrically disposed and longitudinally extends within the bore.

18. (Previously presented) The airway adapter of claim 17, wherein the first and second pressure bores communicate respectively with laterally spaced first and second notches formed in the at least one strut proximate a longitudinal axis of the housing.

19. (Previously presented) The airway adapter of claim 18, wherein the first and second notches are oriented substantially perpendicularly relative to a length of the at least one strut.

Serial No. 09/841,451

20. (Previously presented) The airway adapter of claim 1, wherein the respiratory flow detection component comprises first and second pressurization ports positioned on opposite sides of the detection chamber.

21. (Previously presented) The airway adapter of claim 1, wherein the respiratory flow detection component comprises first and second pressurization ports formed in the housing on the same side of the detection chamber.

22-74 (Canceled)

75. (Previously presented) A respiratory monitoring system comprising: an airway adapter, comprising:

a housing with a flow passage extending therethrough;

a first window positioned on top of the housing for facilitating luminescence quenching measurements of at least one substance within the flow passage;

a luminescable material disposed in communication with the flow passage and adjacent the first window;

a pair of second windows positioned on sides of the housing on opposite sides of the flow passage for facilitating infrared measurements of at least another substance within the flow passage;

a transducer-orienting element; and

a transducer, comprising:

an attachment feature configured to secure the transducer to the airway adapter, with the transducer-orienting element of the airway adapter defining an orientation of the transducer and a plurality of features thereof with the airway adapter such that luminescence quenching measurements are made through the first window and infrared measurements are made through the second windows.

Serial No. 09/841,451

76. (Previously presented) The respiratory monitoring system of claim 75, wherein a membrane carrying the luminescable material is disposed on an inside of the first window.

77. (Canceled)

78. (Canceled)

79. (Canceled)

80. (Previously presented) The respiratory monitoring system of claim 75, wherein the transducer-orienting element is configured to orient a radiation source and luminescence detector of the transducer toward the first window, an infrared source of the transducer toward one second window of the pair, and an infrared detection component of the transducer toward another second window of the pair.

81. (Previously presented) The respiratory monitoring system of claim 75, further comprising a respiratory flow detection component located along another position of the flow passage than positions of the first window and the pair of second windows.

Serial No. 09/841,451

82. (Previously presented) A respiratory monitoring system, comprising: An airway adapter, comprising:  
a housing including:  
a flow passage extending through at least a portion of a length thereof; and  
a transducer orienting element comprising seat for receiving a complementarily configured portion of a transducer;  
a transducer comprising:  
a radiation source and a luminescence detector to make luminescence quenching measurements;  
an infrared source and an infrared detector to make additional measurements;  
a first window in the housing for facilitating luminescence quenching measurements of at least one substance in the flow passage, the seat of the housing orienting the radiation source and the luminescence detector of the transducer toward the first window;  
a luminescable material disposed in communication with the flow passage and adjacent the first window;  
a second window in the housing for facilitating infrared measurements of at least another substance in the flow passage, the seat of the housing orienting the infrared source and the infrared detection component of the transducer toward the second window; and  
an attachment feature that secures the transducer to the transducer-orienting element of the airway adapter, with the transducer-orienting element defining an orientation of the transducer and a plurality of features thereof with the airway adapter.

83. (Previously presented) The respiratory monitoring system of claim 82, wherein a membrane carrying the luminescable material is disposed on an inside of the first window.

84. (Previously presented) The respiratory monitoring system of claim 82, wherein the first window is positioned on a top of the housing.

Serial No. 09/841,451

85. (Previously presented) The respiratory monitoring system of claim 82, wherein the second window is positioned on a side of the housing.

86. (Canceled)

87. (Canceled)

88. (Previously presented) The respiratory monitoring system of claim 82, further comprising a respiratory flow detection component located along another position of the flow passage than positions of the first window and the pair of second windows.

89-100 (Canceled)

101. (Previously presented) A respiratory monitoring system, comprising:  
an airway adapter, comprising:  
a housing with a flow passage extending therethrough, the housing including:  
a transducer-orienting element comprising a seat that receives a complementarily configured portion of a transducer;  
a first window in the housing for facilitating luminescence quenching measurements of at least one substance within the flow passage, a luminescable material disposed in communication with the flow passage and adjacent the first window;  
a pair of second windows positioned in the housing on opposite sides of the flow passage for facilitating infrared measurements of at least another substance within the flow passage;  
a transducer, comprising:  
a radiation source and a luminescence detector for making luminescence quenching measurements;  
an infrared source and an infrared detector for making additional measurements; and

Serial No. 09/841,451

an attachment feature securing the transducer to the transducer-orienting element, with the seat of the transducer-orienting element of the airway adapter defining an orientation of the transducer and orienting:

the radiation source and the luminescence detector toward the first window;

the infrared source toward one second window of the pair, and

the infrared detection component of the transducer toward another second window of the pair.

102. (Previously presented) A respiratory monitoring system, comprising: an airway adapter, comprising:

a housing including a flow passage extending through at least a portion of a length thereof;

a first window positioned on top of the housing for facilitating luminescence quenching measurements of at least one substance in the flow passage;

a luminescable material disposed in communication with the flow passage and adjacent the first window;

a second window positioned on a side of the housing for facilitating infrared measurements of at least another substance in the flow passage;

a transducer-orienting element;

a transducer comprising:

a first device for making luminescence quenching measurements through the first window;

a second device for making infrared measurements through the second window; and

an attachment feature securing the transducer to the transducer-orienting element of the airway adapter, with the transducer-orienting element defining an orientation of the transducer and a plurality of features thereof with the airway adapter.

103. (Canceled)

Serial No. 09/841,451

104. (Previously presented) An airway adapter configured to substantially simultaneously provide data indicative of respiratory gas flow and of a concentration of at least two substances present in respiration of an individual, comprising:  
a housing with a bore formed therethrough and a detection chamber positioned along the bore;  
a respiratory flow detection component formed in the housing, in communication with the bore,  
and comprising first and second pressurization ports positioned on opposite sides of the detection chamber;  
a first respiratory detection component configured to facilitate sensing of at least a first of the at least two substances without diverting respiratory gases from the housing and comprising the detection chamber, a boundary of the detection chamber at least partially defined by at least one window; and  
a second respiratory detection component comprising at least one luminescence quenching sensor configured to facilitate sensing of at least a second of the at least two substances without diverting respiratory gases from the housing.

105. (Previously presented) The airway adapter of claim 104, wherein the respiratory flow detection component comprises:

a structure within the housing for creating therein a pressure differential in respiratory gas flow; and  
first and second pressure bores formed in the housing and located so as to facilitate detection of the pressure differential.

106. (Previously presented) The airway adapter of claim 104, wherein the boundary of the detection chamber is at least partially defined by opposed windows.

107. (Previously presented) The airway adapter of claim 104, wherein the at least one window is optically compatible so as to permit a beam of infrared radiation to traverse the detection chamber.

**Serial No. 09/841,451**

108. (Previously presented) The airway adapter of claim 104, wherein the first respiratory detection component is configured to facilitate measurement of at least one of CO<sub>2</sub>, N<sub>2</sub>O, and an anesthetic agent.

109. (Previously presented) The airway adapter of claim 104, wherein the first respiratory detection component and the second respiratory detection component include at least one common element.

110. (Previously presented) The airway adapter of claim 104, wherein the at least one window is formed from a polymer.

111. (Previously presented) The airway adapter of claim 110, wherein the polymer comprises a biaxially oriented polypropylene.

112. (Previously presented) The airway adapter of claim 105, wherein the structure for creating the pressure differential comprises at least one strut.

113. (Previously presented) The airway adapter of claim 112, wherein the first and second pressure bores are at least partially formed within the at least one strut.

114. (Previously presented) The airway adapter of claim 113, wherein the at least one strut comprises a restriction member with at least one surface oriented so as to substantially perpendicularly face a direction of respiratory gas flow through the housing.

115. (Previously presented) The airway adapter of claim 114, wherein the restriction member has a disk shape.

**Serial No. 09/841,451**

116. (Previously presented) The airway adapter of claim 114, wherein the at least one strut includes a taper oriented toward the detection chamber.

117. (Previously presented) The airway adapter of claim 113, wherein the at least one strut is diametrically disposed and longitudinally extends within the bore.

118. (Previously presented) The airway adapter of claim 117, wherein the first and second pressure bores communicate respectively with laterally spaced first and second notches formed in the at least one strut proximate a longitudinal axis of the housing.

119. (Previously presented) The airway adapter of claim 118, wherein the first and second notches are oriented substantially perpendicularly relative to a length of the at least one strut.

120. (Previously presented) The airway adapter of claim 104, wherein the respiratory flow detection component comprises first and second pressurization ports positioned on opposite sides of the detection chamber.

121. (Previously presented) The airway adapter of claim 104, wherein the respiratory flow detection component comprises first and second pressurization ports formed in the housing on the same side of the detection chamber.

122. (Previously presented) The airway adapter of claim 101, wherein a membrane carrying the luminescable material is disposed on an inside of the first window.

123. (Previously presented) The airway adapter of claim 101, further comprising a respiratory flow detection component located along another position of the flow passage than positions of the first window and the pair of second windows.

**Serial No. 09/841,451**

124. (Previously presented) The airway adapter of claim 102, wherein a membrane carrying the luminescable material is disposed on an inside of the first window.

125. (Previously presented) The airway adapter of claim 102, further comprising: a respiratory flow detection component located along another position of the flow passage than positions of the first window and the pair of second windows.

**Serial No. 09/841,451**

**IN THE DRAWINGS:**

The attached sheets of drawings include corrections to FIGs. 4, 7 and 14. These sheets, which include FIGs. 4, 7 and 14, replace the original sheets including FIGs. 4, 7 and 14.

Specifically, FIG. 4 has been revised to add the reference numeral --6-- with opposite bracket (plane 6-6 referred to in paragraph [0042]; FIG. 7 has been revised to add reference numerals 232 and 236 with appropriate lead lines; and FIG. 14 has been revised to change the reference numeral "40" to --40'-- and to change the reference numeral "236" to --236'-- to eliminate redundancy with previously used reference numerals. No new matter has been added.